

AMENDMENTS TO THE CLAIMS

1. *(Previously Presented)* A semiconductor device having at least one semiconductor chip manufactured from a wafer, said semiconductor chip having a two-dimensional code pattern for information management provided directly on a surface of said at least one semiconductor chip by projection and exposure with the pattern representing chip ID information, and said two-dimensional code pattern is comprised of a plurality of square blocks arranged in a matrix in a predetermined two-dimensional region.

2. *(Original)* A semiconductor device according to claim 1, wherein:
said chip ID information includes chip information inherent to each chip.

3. *(Original)* A semiconductor device according to claim 1, wherein:
said chip ID information is projected and exposed using a liquid crystal mask that is capable of changing a light transmitting pattern for each exposure.

4. *(Currently Amended)* A semiconductor device manufactured using a lead frame, [[with]] the lead frame having a two-dimensional code pattern for information management provided on said lead frame to which semiconductor chips are bonded, [[with]] the pattern being directly applied to a peripheral surface of the lead frame and representing frame ID information, and said two-dimensional code pattern is comprised of a plurality of square blocks arranged in a grid in a predetermined two-dimensional region.

5. *(Original)* A semiconductor device according to claim 4, wherein:

said frame ID information includes chip positional information corresponding to chips within said frame.

6. *(Previously Presented)* A semiconductor device according to claim 4, wherein:
said frame ID information is made to correspond to chip ID information provided as a two-dimensional barcode pattern for information management for each chip.

7. *(Previously Presented)* A semiconductor device having at least one semiconductor chip sealed by resin, and having a two-dimensional code pattern for information management provided directly on an outer surface of said resin and representing product ID information, and said two-dimensional code pattern is comprised of a plurality of square blocks arranged in a matrix in a predetermined two-dimensional region.

8. *(Original)* A semiconductor device according to claim 7, wherein:
said product ID information includes additional information corresponding to individual chips that are resin-sealed.

9. *(Previously Presented)* A semiconductor device according to claim 7, wherein:
said product ID information corresponds to chip ID information provided as a two-dimensional barcode pattern for information management for each chip.

10. *(Previously Presented)* A semiconductor device according to claim 7, wherein:
said product ID information corresponds to frame ID information provided as a two-dimensional barcode pattern for information management on a lead frame to which semiconductor chips are bonded.

11. *(Currently Amended)* An information management system for semiconductor devices[[,]] having at least one semiconductor chip, the system implements management of information related to said semiconductor devices separated for individual semiconductor devices comprising:

a read device that reads chip ID information, said chip ID information is provided directly on a surface of said semiconductor chip by projection and exposure as a two-dimensional code pattern for information management for each chip, said two-dimensional code pattern is comprised of a plurality of square blocks arranged in a matrix in a predetermined two-dimensional region; and

a management unit that registers said chip ID information thus read and manages individual semiconductor manufacturing processes based upon said chip ID information that registered.

12. *(Previously Presented)* An information management system for semiconductor devices according to claim 11, wherein:

said chip ID information is made to correspond to mapping data obtained during a probing process.

13. *(Original)* An information management system for semiconductor devices according to claim 11, wherein:

 said chip ID *information* is projected and exposed using a liquid crystal mask that is capable of changing a light transmitting pattern for each exposure.

14. *(Currently Amended)* An information management system for semiconductor device manufactured using a lead frame, which system implements management of information related to said semiconductor devices separated for individual semiconductor devices comprising:

 a read device that reads frame ID information, said frame ID information is provided directly on a peripheral surface of said lead frame as a two-dimensional code pattern for information management, said two-dimensional code pattern is comprised of a plurality of square blocks arranged in a matrix in a predetermined two-dimensional region; and

 a management unit that registers said frame ID information thus read and manages individual semiconductor manufacturing processes based upon said frame ID information that registered.

15. *(Previously Presented)* An information management system for semiconductor devices according to claim 14, wherein:

 said frame ID information corresponds to chip ID information provided as a two-dimensional barcode pattern for information management for each chip.

16. *(Currently Amended)* An information management system for semiconductor devices having semiconductor chip sealed by resin, which system implements management of information related to said semiconductor devices separated for individual semiconductor devices comprising:

a read device that reads product ID information, said product ID information is provided as a two-dimensional code pattern for information management directly on an outer surface of said resin, said two-dimensional code pattern is comprised of a plurality of square blocks arranged in a matrix in a predetermined two-dimensional region; and

a management unit that registers said product ID information and manages a product shipping process based upon said product ID information that registered.

17. *(Previously Presented)* An information management system for semiconductor devices according to claim 16, wherein: said product ID information corresponds to chip ID information provided as a two-dimensional barcode pattern for information management for each chip.

18. *(Previously Presented)* A semiconductor device according to claim 16, wherein: said product ID information corresponds to frame ID information provided as a two-dimensional barcode pattern for information management on a lead frame to which semiconductor chips are bonded.

19. *(Previously Presented)* An information management system for semiconductor devices according to claim 16, wherein:

said product ID information that is registered corresponds to manufacturing process history information corresponding to each chip.

20. *(Previously Presented)* An information management system for semiconductor devices according to claim 16, wherein:

said product ID information that is registered corresponds to claim information regarding claims made in the field after product shipment.

21. *(Previously Presented)* A semiconductor device according to claim 1, wherein said two-dimensional code pattern is formed on said semiconductor chip by photolithography.

22. *(Previously Presented)* A semiconductor device according to claim 7, wherein the blocks of two-dimensional code are formed by laser printing directly on the outer surface of the resin.